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10/600,120

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Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ	
☐	L7	L6 and wild near type	8
☐	L6	L5 and barley	12
☐	L5	(lox1 or loxA or lox-A or lox-1) near3 (mutant or mutated)	13
☐	L4	L3 and (kernel or grain)	5
☐	L3	L2 and wild near type	10
☐	L2	barley and (lox1 or loxA) and (flavor or beverage or malt? or brew? or stable or stability) and (mutant or deficiency or deficient)	19
☐	L1	mutant near3 barley and (lox1 or loxA)	2

END OF SEARCH HISTORY

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Hide?	Set Name	Query	Hit Count
		DB=USPT; PLUR=YES; OP=ADJ	
☐	L7	L5 and barley	1
☐	L6	L5 and barley and (Lox or lipoxygenase)	0
☐	L5	5993865	2
☐	L4	6274350	3
☐	L3	L2 and barley	0
☐	L2	L1 and (lox or lipoxygenase)	2
☐	L1	6150145	2

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Hide?	Set Name	Query	Hit Count
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ		
☐	L4	L3 and (kernel or grain)	5
☐	L3	L2 and wild near type	10
☐	L2	barley and (lox1 or loxA) and (flavor or beverage or malt? or brew? or stable or stability) and (mutant or deficiency or deficient)	19
☐	L1	mutant near3 barley and (lox1 or loxA)	2

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NEWS 17	AUG 30	CA(SM)/CAplus(SM) Austrian patent law changes
NEWS 18	SEP 11	CA/CAplus enhanced with more pre-1907 records
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NEWS 23	SEP 28	CEABA-VTB classification code fields reloaded with new classification scheme

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=> file caplus biosis agricola medline caba wpix patents
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	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.42	0.42

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=> s mutant (2a) barley (p) (lox-1 or loxA or lox-A or lipoxygenase)
   6 FILES SEARCHED...
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'BARLEY (P) '
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'BARLEY (P) '
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FIELD CODE - 'AND' OPERATOR ASSUMED 'BARLEY (P) '
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'BARLEY (P) '
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PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'BARLEY (P) '
  24 FILES SEARCHED...
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'BARLEY (P) '
  30 FILES SEARCHED...
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'BARLEY (P) '
  42 FILES SEARCHED...
L1          41 MUTANT (2A) BARLEY (P) (LOX-1 OR LOXA OR LOX-A OR LIPOXYGENASE)

=> s mutant (2a) barley (5a) (lox-1 or loxA or lox-A or lipoxygenase)
   6 FILES SEARCHED...
  10 FILES SEARCHED...
  24 FILES SEARCHED...
  30 FILES SEARCHED...
  42 FILES SEARCHED...
L2          41 MUTANT (2A) BARLEY (5A) (LOX-1 OR LOXA OR LOX-A OR LIPOXYGENASE)


=> s l2 and wild (w) type
  15 FILES SEARCHED...
  37 FILES SEARCHED...
L3          24 L2 AND WILD (W) TYPE
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=> s l3 not py>2003
   6 FILES SEARCHED...
  17 FILES SEARCHED...
'2003' NOT A VALID FIELD CODE
  31 FILES SEARCHED...
'2003' NOT A VALID FIELD CODE
L4            6 L3 NOT PY>2003

=> dup remov l4
DUPLICATE IS NOT AVAILABLE IN 'CAOLD, DGENE, DPCI, IMSPATENTS, LITALERT,
PATDPASPC, PCTGEN, PROUSDDR, PS, RDISCLOSURE, SYNTHLINE'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L4
L5             4 DUP REMOV L4 (2 DUPLICATES REMOVED)

=> d his

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     FILE 'CAPLUS, BIOSIS, AGRICOLA, MEDLINE, CABA, WPIX, CAOLD, CASREACT,
     CROPU, DGENE, DPCI, ENCOMPPAT, EPFULL, FRANCEPAT, FRFULL, FSTA, GBFULL,
     IFIPAT, IMSPATENTS, INPADOC, JAPIO, KOREAPAT, LITALERT, NTIS, PAPERCHEM2,
     PATDD, PATDPA, PATDPAFULL, PATDPASPC, ...' ENTERED AT 10:16:39 ON 14 OCT
     2006
L1            41 S MUTANT (2A) BARLEY (P) (LOX-1 OR LOXA OR LOX-A OR LIPOXYGENAS
L2            41 S MUTANT (2A) BARLEY (5A) (LOX-1 OR LOXA OR LOX-A OR LIPOXYGENA
L3            24 S L2 AND WILD (W) TYPE
L4             6 S L3 NOT PY>2003
L5             4 DUP REMOV L4 (2 DUPLICATES REMOVED)

=> d l5 1-4

L5   ANSWER 1 OF 4  IFIPAT  COPYRIGHT 2006 IFI on STN  DUPLICATE 1
AN    10423120  IFIPAT;IFIUDB;IFICDB
TI    LOW LIPOXYGENASE 1 BARLEY; HYBRID GENE; OXIDATION RESISTANCE; STORAGE
      STABILITY; BEER
IN    van Mechelen Johannes Reinier (NL); Bech Lene Moelskov (DK);
      Cameron-Mills Verena (DK); Doderer Albert (NL); Douma Anna Christina
      (NL); Heistek Jolanda Carolina (NL); Schmitt Natalie (NL); Skadhauge
      Birgitte (DK)
PA    Unassigned Or Assigned To Individual (68000)
PPA   Brasseries Kronenbourg Par Actions S C FR (Probable)
PI    US 2003167544   A1  20030904
AI    US 2000-751687      20001229
FI    US 2003167544       20030904
      US 6660915          20031209
DT    Utility; Patent Application - First Publication
FS    CHEMICAL
      APPLICATION
OS    CA 139:208886
CLMN  33
GI     22 Figure(s).
     FIG. 1 is a graph showing the effect of the inhibitor nordihydroguaiaretic
      acid (NDGA) on immuno-affinity purified lipoxygenase 1 and 2 activity
      from embryos of 3 day germinated barley grain.
     FIG. 2 is a graph showing the fresh weight of developing grain of Line G
      and cv Vintage from 5 days after flowering to fullmaturity (FM). Each
      determination is the mean single grain weight from 6 spikes.
     FIG. 3 is a graph showing the dry weight of developing grain of Line G and
      cv Vintage from 5 days after flowering to fullmaturity (FM). Each
      determination is the mean single grain weight from 3 samples of 5 grain.
     FIG. 4 is a graph showing total lipoxygenase activity in developing grain
      of Line G and cv Vintage from 5 days after flowering to full-maturity
```

(FM).
FIG. 5 is a graph showing 9- and 13-HPOD products of linoleic acid oxidation by lipoxygenase activity in developing grain of Line G.
FIG. 6 is a graph showing total lipoxygenase activity in embryos of germinating grain of Line G and cv Vintage expressed as mu mol/min/10 embryos (U/10 embryos).
FIG. 7 is a graph showing 9-HPOD and 13-HPOD products of linoleic acid oxidation by lipoxygenase activity in embryos of germinating grain of Line G and cv Vintage, showing levels of 9HPOD and 13-HPOD.
FIG. 8 is a Western blot showing immunodetection of lipoxygenase 1 in embryos of developing grain of Line G and cv Vintage (wt) from 5 days after flowering to full-maturity (FM).
FIG. 9 is a Western blot showing immunodetection of lipoxygenase 1 in embryos of grain of Line G and cv Vintage (wild-type) germinated for 0-6 days.
FIG. 10 is a Northern blot probed with the 3' non-transcribed region of the lox-1 cDNA and showing lipoxygenase 1 transcripts detected in developing grain of Line G and cv Vintage (wildtype) from 5 days after flowering to full-maturity (FM).
FIG. 11 is a Northern blot probed with the 3' non-transcribed region of the lox-1 cDNA and showing lipoxygenase 1 transcripts detected in embryos of grain of Line G and cv Vintage (wt) germinated for 0-6 days.
FIGS. 12A-12G are a nucleotide sequence alignment of the promoter and transcribed region of the lox-1 wild-type cv Vintage allele (WT) and the Line G allele (LG). The transcription start site (+1), ATG start codon (+69) and translation stop codon (+4231) in the gene sequences are underlined. Nucleotide mutations identified in the Line G allele are shown in bold italics and indicated by an asterisk.
FIG. 13 is a schematic presentation of the lox-1 gene of cv Vintage (wild-type) and the mutant lox-1 gene of Line G. The transcript from +1 to +4375 is composed of 7 exons (stippled boxes) and 6 introns (white boxes). Two mutations in the lox-1 gene are indicated.
FIG. 14 is a schematic drawing of gene cassettes for transient expression of the wild-type lox-1 cDNA and lox-1 gene and the mutant lox-1 gene from Line G. The lipoxygenase coding sequences were cloned between the constitutive maize ubiquitin promoter with intron 1 (Ubi-1) and the nos terminator.
FIG. 15 is a bar graph showing Lipoxygenase 1 activity in barley aleurone protoplasts transfected with gene cassettes containing the wild -type lox-1 cDNA; the mutant lox-1 gene from Line G; WT lox-1 gene; and a control GUS reporter gene. Lipoxygenase activity in extracts of transfected protoplasts was assayed in microtiter plates by the oxidation of KI and quantitated spectrophotometrically. Lipoxygenase 1 activity was expressed as units per mu g protein in the extract and is shown as the mean of 3 measurements from 2 replicate assays.
FIG. 16 is a sequence alignment demonstrating that a RFLP between the wild-type and mutant lox-1 gene is due to a point mutation at nucleotide 2347, creating an additional AatII restriction site.
FIG. 17 is a schematic presentation of the lox-1 PCR fragments amplified and cleaved in the polymerase chain reaction-cleavage amplified polymorphic site (PCR-CAPS) assay. The positions of PCR primers are indicated by arrows and the AatII sites are shown above the gene (sequence position). The exon and intron regions within the PCR product are distinguished by stippled and white boxes respectively, and the sizes of the AatII digestion fragments are given.
FIG. 18 is an electrophoretic agarose gel showing lox-1 PCR fragments (652 bp) amplified in the first step of the PCR-CAPS assay from Line G and cv Vintage genomic DNA.
FIG. 19 is an electrophoretic agarose gel showing RFLP detected by PCR-CAPS in the wild-type and mutant lox-1 gene. The AatII digestion fragments of the mutant gene include a unique 313 bp restriction fragment, indicated by an asterisk.
FIG. 20 is a table showing a back-crossing program for the single

recessive gene pair ll (low lipoxygenase trait) of Line G to cv Alexis. The LL genotype are plants expressing wild-type lipoxygenase activity (dominant allele), the ll genotype are plants expressing the low-lipoxygenase (recessive allele). Ll are heterozygous plants containing both the wild-type and the low-lipoxygenase allele. Since the low-lipoxygenase trait is a recessive trait, Ll plants show wild-type lipoxygenase activity. After each round of back-crossing (including self-pollination), the ll progeny is expected to represent 25% of the progeny. The observed frequencies of low-lipoxygenase activity are indicated. The calculated percentage of the cv Alexis genetic background having the homozygous low-lipoxygenase allele is indicated as % Alexis.

FIG. 21 is an electrophoretic agarose gel showing PCR-CAPS detection of the mutant lox-1 gene in ll progeny of the Line GAlexis back-cross program. PCR-CAPS assay on genomic DNA of Line G (Lane 2), cv Vintage (Lane 3), ll progeny of 3rd (Lane 4) and 4th back-cross (Lanes 5-9). DNA ladder (Lane 1). Control, backcrossed high lox line (lane 10).

FIGS. 22A-22B are a comparative alignment of amino acid sequences of soybean lipoxygenases LOX-1 (Gm1), LOX-2 (Gm2), LOX-3 (Gm3), and barley lipoxygenases LOX-1 (Hv1) and LOX-2 (Hv2).

L5 ANSWER 2 OF 4 IFIPAT COPYRIGHT 2006 IFI on STN
AN 03984326 IFIPAT;IFIUDB;IFICDB
TI LOW LIPOXYGENASE 1 BARLEY; MUTATED PROTEIN; STORAGE STABLE MALT, BEER AND BREWED BEVERAGES
IN van Mechelen Johannes Reinier (NL); Bech Lene Moelskov (DK); Cameron-Mills Verena (DK); Doderer Albert (NL); Douma Anna Christina (NL); Heistek Jolanda Carolina (NL); Schmitt Natalie (NL); Skadhauge Birgitte (DK)
PA Unassigned Or Assigned To Individual (68000)
PI US 6660915 B2 20031209
US 2003167544 A1 20030904
AI US 2000-751687 20001229
FI US 6660915 20031209
US 2003167544 20030904
DT Utility; REASSIGNED; Granted Patent - Utility, with Pre-Grant Publication
FS CHEMICAL
GRANTED
MRN 011778 MFN: 0132
012006 0319
CLMN 11
GI 29 Drawing Sheet(s), 29 Figure(s).

FIG. 1 is a graph showing the effect of the inhibitor nordihydroguaiaretic acid (NDGA) on immuno-affinity purified lipoxygenase 1 and 2 activity from embryos of 3 day germinated barley grain.

FIG. 2 is a graph showing the fresh weight of developing grain of Line G and cv Vintage from 5 days after flowering to fullmaturity (FM). Each determination is the mean single grain weight from 6 spikes.

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TIFR ORGE A LIPOXYGENASE 1 FAIBLE
IN DOUMA, Anna, Christiana, Eikenlaan 11B, NL-3707 SB Zeist, NL [NL, NL];
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LAF English
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DT Patent
PI WO 2002053721 A1 20020711
DS W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
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RW (OAPI): BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

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PRAI US 2000-09/751,687 20001229
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ICS C12N015-82; A01H005-10

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LAF English
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PI WO 2002053720 A1 20020711
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MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA
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RW (EAPO): AM AZ BY KG KZ MD RU TJ TM
RW (EPO): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
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AI WO 2000-IB2045 A 20001229
ICM C12N009-02
ICS C12N015-82; A01H005-10

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☐ 1. Document ID: US 20060005276 A1

L4: Entry 1 of 5 File: PGPB Jan 5, 2006

PGPUB-DOCUMENT-NUMBER: 20060005276
PGPUB-FILING-TYPE:
DOCUMENT-IDENTIFIER: US 20060005276 A1

TITLE: Transgenic soybean seeds having reduced activity of lipoxygenases

PUBLICATION-DATE: January 5, 2006

INVENTOR-INFORMATION:

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US-CL-CURRENT: 800/281; 800/312

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 2. Document ID: US 20040103453 A1

L4: Entry 2 of 5 File: PGPB May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040103453
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040103453 A1

TITLE: Lipoxygenase genes, promoters, transit peptides and proteins thereof

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
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US-CL-CURRENT: 800/279; 435/189, 435/320.1, 435/419, 530/370, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De

☐ 3. Document ID: US 20030167544 A1

L4: Entry 3 of 5 File: PGPB Sep 4, 2003

PGPUB-DOCUMENT-NUMBER: 20030167544
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030167544 A1

TITLE: Low lipoxygenase 1 barley

PUBLICATION-DATE: September 4, 2003

INVENTOR-INFORMATION:

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Skadhauge, Birgitte	Birkeroed		DK
Bech, Lene Moelskov	Smoerum		DK
Schmitt, Natalie	Den Haag		NL
Heistek, Jolanda Carolina	Vlaardingen		NL
van Mechelen, Johannes Reinier	Amsterdam		NL

US-CL-CURRENT: 800/320.1; 800/281

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De

☐ 4. Document ID: US 6660915 B2

L4: Entry 4 of 5 File: USPT Dec 9, 2003

US-PAT-NO: 6660915
DOCUMENT-IDENTIFIER: US 6660915 B2

TITLE: Low lipoxygenase 1 barley

DATE-ISSUED: December 9, 2003

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Skadhauge; Birgitte	Birkeroed			DK
Bech; Lene Moelskov	Smoerum			DK
Schmitt; Natalie	Den Haag			NL
Heistek; Jolanda Carolina	Vlaardingen			NL

van Mechelen; Johannes Reinier Amsterdam NL

US-CL-CURRENT: 800/320; 426/11, 426/64, 426/7, 435/183, 435/185, 800/278, 800/298

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 5. Document ID: US 6627797 B1

L4: Entry 5 of 5 File: USPT Sep 30, 2003

US-PAT-NO: 6627797
DOCUMENT-IDENTIFIER: US 6627797 B1

TITLE: Maize lipoxygenase polynucleotide and methods of use

DATE-ISSUED: September 30, 2003

INVENTOR-INFORMATION:

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US-CL-CURRENT: 800/279; 435/320.1, 435/419, 435/430, 435/468, 536/23.2, 536/23.6, 536/24.1, 536/24.5, 800/278, 800/287, 800/295, 800/298, 800/306, 800/312, 800/314, 800/317.1, 800/317.3, 800/322

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

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